Port Sudan as a Strategic Hub in Maritime Shipping Markets and Transit Trade

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ABSTRATCT:
The transit market plays a pivotal role in the economic landscape of countries with strategic geographical positions, particularly those located along key international trade routes. Sudan, with its Red Sea coastline and the Port Sudan container terminal, stands as a crucial gateway for transit trade in the region. This research aims to analyse transit trade market at the container terminal in Port Sudan.
This research has significant observations such as; waiting time and docking time both saw significant increases in 2018 and beyond, indicating potential inefficiency His or increased port congestion. The total time required for waiting, docking, and staying at the port nearly quadrupled from 2012 to 2020, which suggests a major decrease in port efficiency during this period. The sharp increase and subsequent decrease in docking time from 2018 to 2021 might indicate temporary operational challenges or improvements. These observations highlight periods of

inefficiency that may be linked to increased traffic, changes in port management, or external factors affecting port operations. The data indicates that the port experienced significant challenges starting in 2018.

Keywords: Shipping Markets, Transit, , Port Sudan, Sudan.

بورتسودان كمركز استراتيجي في أسواق الشحن البحري وتجارة الترانزيت

المستخلص:

يؤدي سوق المرور العابر دورا محوريا في المشهد الاقتصادي للبلدان ذات المواقع الجغرافية الاستراتيجية ، ولا سيما البلدان الواقعة على طول طرق التجارة الدولية الرئيسية. السودان، مع ساحله على البحر الأحمر ومحطة حاويات بورتسودان ، يقف كبوابة حاسمة لتجارة الترانزيت في المنطقة. يهدف هذا البحث إلى تحليل سوق تجارة الترانزيت في محطة الحاويات في بورتسودان.

يحتوي هذا البحث على ملاحظات مهمة مثل؛ شهد وقت الانتظار ووقت الالتحام زيادات كبيرة في عام ٢٠١٨ وما بعده، مما يشير إلى عدم الكفاءة المحتملة له أو زيادة ازدحام الميناء. تضاعف إجمالي الوقت اللازم للانتظار والرسو والبقاء في الميناء أربع مرات تقريبا من عام ٢٠١٢ إلى عام ٢٠٢٠، مما يشير إلى انخفاض كبير في كفاءة الميناء خلال هذه الفترة. قد تشير الزيادة الحادة والانخفاض اللاحق في وقت الإرساء من ٢٠١٨ إلى ٢٠٢١ إلى تحديات تشغيلية مؤقتة أو تحسينات. تسلط هذه الملاحظات الضوء على فترات عدم الكفاءة التي قد تكون مرتبطة بزيادة حركة المرور أو التغييرات في إدارة الموانئ أو العوامل الخارجية التي تؤثر على عمليات الموانئ. تشير البيانات إلى أن الميناء واجه تحديات كبيرة بدءا من عام ٢٠١٨.

الكلمات الدالة: أسواق الشحن، تجارة العبور، بورتسودان، السودان.

1. INTRODUCTION

The maritime economy is a cornerstone of global trade, encompassing the diverse range of activities that facilitate the transportation of goods across the world's oceans. It plays a critical role in sustaining the global supply chain, providing an efficient and cost-effective method for moving vast quantities of goods over long distances (Stopford, 2009). Central to the maritime economy are maritime shipping markets, which include various segments such as bulk, tanker, and container shipping. Among these, the transit market is particularly significant, especially for countries that serve as strategic transit points for international trade routes (Brooks et al., 2020).

The transit market, essential for global trade, involves the temporary storage and transfer of goods through a country's ports to their destination. This market is particularly crucial for nations along major maritime corridors, such as the Suez Canal or the Red Sea, as it generates significant revenue through transit fees, port services, and logistics activities (Notteboom & Rodrigue, 2005). Port Sudan's strategic location along the Red Sea positions it as a vital hub in the transit market, especially for trade routes connecting Europe, Asia, and Africa (Rodrigue et al., 2020).

Port Sudan's container terminal is becoming increasingly important in the global maritime economy. Future trends like the rise of mega-ships, automation, and sustainability are expected to

influence its development, bringing both opportunities and challenges. To remain competitive in regional and global markets, Port Sudan must invest in infrastructure, adopt advanced technologies, and enhance operational efficiency. Additionally, the port must implement sustainable practices to comply with stricter environmental regulations while maintaining economic viability.

The transit trade market significantly contributes to the Sudanese economy. It generates revenue through port fees, customs duties, and service charges. Additionally, the port creates employment opportunities for local communities, fostering economic development in the region. The growth of the transit trade market also stimulates ancillary industries such as logistics, transportation, and warehousing (Sea Port Corporation, 2023).

This research analyses transit trade market at the container terminal in Port Sudan, focusing on its role in facilitating trade for landlocked countries in the region. The study will examine the status, performance indicators, and future trends using economic theories and principles learned in Maritime Economics.

2. THE LITERATURE REVIEW

The transit market plays a pivotal role in the economic landscape of countries with strategic geographical positions, particularly those located along key international trade routes. Sudan, with its Red Sea coastline and the Port Sudan container terminal, stands

as a crucial gateway for transit trade in the region. This literature review examines the existing body of research on the transit market in Sudan, with a focus on the Port Sudan container terminal, and explores the future trends that may influence its development.

2.1 The Role of Transit Markets in Economic Development

The concept of transit trade involves the movement of goods from one country to another, utilizing the country's infrastructure without those goods entering the domestic market. Transit trade is significant for landlocked countries and those along major maritime routes, as it offers a vital source of revenue through port fees, handling charges, and related services. By facilitating the efficient movement of goods, transit markets not only generate revenue through transit fees and port services but also stimulate related industries such as logistics, warehousing, and transportation. This, in turn, enhances a country's global trade position, attracts foreign investment, and supports the development of infrastructure, all of which are crucial for sustained economic development. Notteboom and Rodrigue (2005) highlight the strategic importance of transit trade for countries located along chokepoints such as the Suez Canal and the Strait of Hormuz. Sudan, located along the Red Sea, benefits similarly from its proximity to the Suez Canal, making Port Sudan a critical node in the global shipping network.

2.2 Future Trends in the Transit Market

As global trade dynamics evolve, so too do the factors that influence the transit market. The rise of mega-ships, which require deeper draughts and larger berths, has implications for ports worldwide, including Port Sudan. As noted by Stopford (2009), ports that fail to upgrade their infrastructure to accommodate these larger vessels risk losing their competitive edge. In line with this, there have been recent efforts by the Sudanese government and international partners to invest in port infrastructure to enhance Port Sudan's capacity (World Bank, 2019).

Automation and digitization are also pivotal trends influencing the future of port operations. A report by the United Nations Conference on Trade and Development (UNCTAD, 2020) indicates that ports implementing advanced technologies, such as automated container handling systems and blockchain for secure documentation, are likely to dominate in the coming decades. For Port Sudan, integrating these technologies could result in enhanced efficiency, shorter turnaround times, and a stronger attraction for international shipping lines.

Sustainability is also a critical consideration for the future of the transit market. With growing international pressure to reduce carbon emissions, ports worldwide are exploring ways to minimize their environmental impact. The implementation of green port initiatives, such as shore power for ships and the use of renewable energy sources, is becoming increasingly important

(Rodrigue et al., 2017). For Port Sudan, investing in sustainable practices not only aligns with global trends but also enhances the port's attractiveness to eco-conscious shipping companies.

2.3 Knowledge Gaps

While there is substantial literature on the general dynamics of transit markets and the strategic importance of ports, specific studies focused on Port Sudan are limited. There is a need for more empirical research that examines the operational challenges and potential of Port Sudan's container terminal in the context of regional and global transit trade.

3. THE ROLE OF PORTS IN TRANSIT TRADE

Ports play a crucial role in facilitating transit trade, particularly for landlocked countries that rely on neighboring countries' port infrastructure to access international markets. Transit trade involves the transportation of goods through a country to reach another country, and efficient port operations are vital for minimizing costs, reducing delays, and ensuring smooth trade flows.

3.1 Economic Theories Relevant to Port Operations

The efficiency and capacity of a port influence the demand for its services; high demand can lead to congestion and increased costs if facilities are insufficient. Ports that handle large cargo volumes benefit from economies of scale, reducing per-unit costs and boosting competitiveness. Additionally, efficient and cost-effective ports provide a comparative advantage for a country,

making them attractive transit points for neighboring landlocked nations and enhancing their position in global trade networks.

3.2 Transit Trade and Its Importance

Abdul Salem (2007) notes that while transit trade initially developed alongside maritime business, its significance grew with the rise and swift adoption of container transport. This method became crucial for boosting productivity as ships began to compete in delivering goods to their final destinations via intermediary ports. This approach was often necessary due to challenges at the destination ports, such as insufficient water depth, inadequate facilities for quick handling of goods, congestion, or political risks.

4. THE IMPORTANCE OF PORT SUDAN:

Port Sudan is the principal port of Sudan and serves as a vital transit hub for goods destined for neighboring countries, particularly South Sudan, Chad, and Ethiopia. According to a report by the World Bank (2019), Port Sudan's container terminal is instrumental in facilitating trade between these landlocked nations and the rest of the world. The port's strategic location along the Red Sea places it on the maritime route connecting Europe, the Middle East, and Asia, thereby enhancing its potential as a transit hub.

Port Sudan, as a strategic maritime hub, has several strengths that enhance its role in regional and global trade:

- Strategic Location: Situated along the Red Sea, Port Sudan is a key transit point for trade routes connecting Europe, Asia, and Africa. Its location makes it a vital access point for landlocked countries in the region.
- Natural Deep-Water Port: Port Sudan has a natural deep-water harbor, which allows it to accommodate larger vessels, including mega-ships. This capability is crucial for handling significant cargo volumes and reducing transportation costs.
- Proximity to Major Trade Routes: The port's proximity to vital maritime routes, such as the Suez Canal, enhances its attractiveness to international shipping lines, making it a critical node in global supply chains.
- Diverse Cargo Handling: Port Sudan is equipped to handle various types of cargo, including containers, bulk goods, and oil, making it versatile and capable of serving multiple industries.
- Expansion Potential: There is significant potential for further expansion and modernization of Port Sudan's infrastructure, which could increase its capacity and efficiency, making it even more competitive in the global market.

- Economic Gateway for Sudan: As Sudan's primary maritime gateway, Port Sudan plays a crucial role in the country's economy by facilitating imports and exports, supporting trade, and generating revenue through port services.
- Supporting Regional Trade: The port's ability to serve neighboring landlocked countries like Chad and Ethiopia positions it as a critical player in regional trade, offering these nations an essential outlet for their international commerce.
- Investment Opportunities: The port's ongoing development and modernization efforts present opportunities for investment in infrastructure, technology, and logistics, which could further enhance its capabilities and economic impact.

However, several studies point to challenges that have hindered the full realization of this potential. Eltahir and Ahmed (2017) discuss infrastructural constraints, such as outdated port facilities and insufficient handling capacity, which have limited the efficiency and competitiveness of Port Sudan in the transit market. Additionally, geopolitical issues and economic instability in Sudan have also affected the port's ability to attract and sustain transit trade.

5. Case Study: Analysis of Transit Trade at Port Sudan Container Terminal

5.1 Overview of Port Sudan

Port Sudan, particularly the South Port Container Terminal, plays a vital role in Sudan's maritime trade. The port serves as a gateway for international trade and is strategically important for neighboring landlocked countries such as Chad, Central African Republic, Ethiopia, and South Sudan. These countries rely on Port Sudan for the import and export of goods, making it a critical hub for transit trade in the region.

Figure 2. Port Sudan location.
Reference: google, 2024.

The South Port Container Terminal, with a total area of approximately 1.9 million square meters, is an integrated facility specialized in container handling. The terminal has six berths with a total length of 1,527 meters, making it capable of handling a significant volume of containerized cargo. Additionally, the presence of a grain silo with a capacity of 50,000 tons enhances the port's capability to handle bulk commodities.

Table 1: Southern Port Grounds

Berth	Length (m)	Depth (m)	Design Energy (ton/day)
13	400	16	Containers: 70,000
14	400	16	Containers: 70,000
15	198.6	10.7	Casting Grain: 30,000
16	128	10.7	Containers: 35,000
17	213.4	12.6	Containers: 35,000
18	213.4	12.6	Containers: 35,000

Source: Sea Port Corporation, Southern Port General Administration, 2023.

5.2 Performance Indicators

The performance of the South Port Container Terminal can be assessed through various indicators, including berth utilization rates and the volume of cargo handled.

5.3 Berth Utilization Rates (2012-2020):

- Berth 15: The highest utilization rate was recorded in 2017 at 45%, while the lowest was in 2018 at 17%. This berth is dedicated to dry bulk vessels and is supported by a grain silo.
- Berth 16: The highest utilization rate was in 2013 at 41%, with the lowest in 2020 at 2.3%. This berth handles small container ships without gantry cranes, relying on mobile and ship cranes for operations.
- Berths 17/18: These berths had their highest utilization in 2017 at 43% and their lowest in 2014 at 17%. These berths handle bulkier cargo.
- Berths 13/14: The highest utilization rate was in 2017 at 89%, and the lowest was in 2019 at 30.5%. These berths are part of a newly constructed container terminal, with utilization measurements starting in 2012.

These indicators reflect varying degrees of efficiency and utilization, influenced by external factors such as economic conditions, port infrastructure, and regional trade dynamics.

5.2 Port Sudan competing territorial ports in transit trade

Port Sudan faces competition from nearby regional ports in the transit trade as globalization continues to expand, intensifying the competition between ports within an interconnected global economy. This has prompted port authorities and operators to reassess and enhance their competitive strategies to adapt to changes in

management and operations at local, regional, and international levels. The element of competition now poses a significant challenge to port authorities. While developed countries have long been ahead in this race, capturing the largest shares of trade, developing countries are still in the process of restructuring their ports as part of their economic development efforts.

Port Sudan competes with several regional ports in facilitating transit trade for landlocked countries, particularly with the ports of Djibouti, Mombasa (Kenya), and Douala (Cameroon). According to the UNCTAD Index (2019), which measures port connectivity based on regular shipping line linkages, vessel frequency, and port stop capacity, the competing ports of Djibouti and Mombasa are more strongly connected to global shipping networks. These ports are strategically located and offer high-quality services, making them more effective in supporting transit trade.

Table 2: Transit Trade for States of Chad and Ethiopia through Port Sudan's Southern Port

Year	Chad (Equivalent Container)	Ethiopia (Equivalent Container)	Total
2013	1065	609	1674
2014	1239	6192	7431
2015	1048	3926	4974
2016	656	1430	2086
2017	193	99	292
2018	1861	0	1861
2019	3115	2832	5947
2020	2438	1210	3648
2021	1230	2044	3274

Source: Sea Port Corporation, Southern Port General Administration, 2023.

The above table 2. presents data on the equivalent container volumes handled by Chad and Ethiopia from 2013 to 2021. The table captures the volume of container trade for each year and the total for both countries combined. Below is a discussion of the key observations and trends from the data:

Trends Over Time:

1. 2013 to 2014 Surge:

There was a significant increase in container volume for both Chad and Ethiopia between 2013 and 2014. Chad's container volume increased from 1,065 to 1,239, while Ethiopia saw an exponential increase from 609 to 6,192. This resulted in a

dramatic rise in the total container volume from 1,674 in 2013 to 7,431 in 2014.

2. 2015 to 2016 Decline:

After 2014, there was a sharp decline in the container volumes for both countries. Chad's volume decreased to 1,048 in 2015 and further to 656 in 2016. Ethiopia's volume also dropped significantly from 6,192 in 2014 to 3,926 in 2015 and then to 1,430 in 2016. This led to a corresponding decrease in the total volume.

3. 2017 Lowest Volume:

2017 recorded the lowest container volumes for both Chad and Ethiopia during this period, with Chad handling only 193 containers and Ethiopia just 99, resulting in a combined total of 292 containers. This represents a dramatic drop-in container trade activity.

4. Recovery from 2018:

There was a notable recovery in 2018, particularly for Chad, where the container volume surged to 1,861. However, Ethiopia reported zero container volume for that year, which led to the total volume equaling Chad's figures alone. From 2019 to 2021, there was a resurgence in container volumes for both countries, with Ethiopia recovering from its zero volume in 2018 to 2,832 in 2019. Chad also saw an increase during these years, with the highest volume recorded in 2019 (3,115 containers). The total

container volume reached 5,947 in 2019 and then decreased to 3,648 in 2020 and 3,274 in 2021.

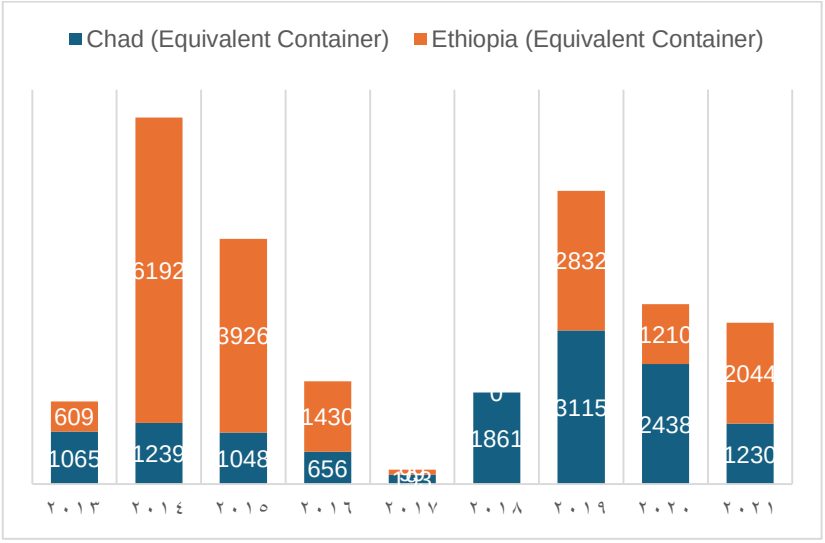

Figure 1. Transit Trade for States of Chad and Ethiopia through Port Sudan's Southern Port.

From the above figure 1. we found that the data highlights several key observations regarding the container trade volumes for Chad and Ethiopia between 2013 and 2021. Ethiopia exhibited high volatility, with container volumes peaking in 2014 and dropping to zero by 2018, before gradually recovering. This volatility suggests that Ethiopia's container trade was heavily impacted by shifts in trade policies, economic conditions, or logistical challenges. In contrast, Chad's performance was more

consistent, with some fluctuations but generally maintaining a stable presence in the container market. The year 2017 stands out as an outlier, where both countries experienced minimal container activity, likely due to external factors such as political instability, economic sanctions, or other disruptions. Overall, the data indicates that both Chad and Ethiopia's container trade volumes were influenced by external factors, including global economic conditions and regional trade dynamics.

5.3 Transit trade statistics in the port of Sudan:

Table (3). Equivalent containers transiting neighboring countries for the year 2018-2022

Year	Chad	Other	Total
2018	**1.861**	**0**	**1.861**
2019	**3.115**	**2.832**	**5.947**
2020	**2.438**	**1.210**	**3.648**
2021	**2.044**	**1.230**	**3.274**
2022	**555**	**897**	**1.452**

Source: Sea Port Corporation, Annual Statistical Report 2022

Table (4). South Sudan's transit trade through northern port

Year	Quantity (Tons)
2015	14,386
2016	33,855
2017	50,605
2018	585
2019	314
2020	23,034

Source: Sea Port Corporation, Annual Statistical Report 2022

Table (5). Waiting time, docking and staying in the South Port (days)

Year	Waiting Time	Docking Time	Total Time
2012	1.3	1.6	2.9
2013	1.3	1.5	2.8
2014	0.9	1.3	2.2
2015	0.5	1.5	2.0
2016	0.2	1.7	1.9
2017	0.7	2.0	2.7
2018	3.0	5.0	8.0
2019	3.5	6.5	10.0
2020	3.5	8.0	11.5
2021	3.5	1.5	5.0

Source: Sea Port Corporation, Annual Statistical Report 2022

Analyze the trends and changes over the years, specifically focusing on the waiting time, docking time, staying time, and total time.

- Waiting Time: the waiting time decreased from 1.3 hours in 2012 to 0.2 hours in 2016, then increased significantly to 3.5 hours by 2019. There was a sharp increase in 2018, reaching 3.0 hours and peaking at 3.5 hours from 2019 to 2021.
- Docking Time: Docking time remained relatively stable from 2012 to 2017, varying between 1.3 to 2.0 hours. There was a notable increase in 2018 to 5.0 hours, and it continued to rise to 8.0 hours in 2020 before dropping back to 1.5 hours in 2021.

- Total Time: Total time saw a gradual decline from 2.9 hours in 2012 to 1.9 hours in 2016. A significant jump occurred in 2018, where the total time increased to 8.0 hours, peaking at 11.5 hours in 2020, before dropping to 5.0 hours in 2021.

Significant Observations: the waiting time and docking time both saw significant increases in 2018 and beyond, indicating potential inefficiency His or increased port congestion. The total time required for waiting, docking, and staying at the port nearly quadrupled from 2012 to 2020, which suggests a major decrease in port efficiency during this period. The sharp increase and subsequent decrease in docking time from 2018 to 2021 might indicate temporary operational challenges or improvements.

These observations highlight periods of inefficiency that may be linked to increased traffic, changes in port management, or external factors affecting port operations. The data indicates that the port experienced significant challenges starting in 2018.

5.4 Technological Developments

One of the most significant drivers of change in Port Sudan's transit trade will be the adoption of advanced technologies in port operations. Automation, digitization, and the integration of artificial intelligence (AI) into logistics management are expected to revolutionize the efficiency and effectiveness of port activities. According to Rodrigue et al. (2020), automation can lead to substantial improvements in cargo handling efficiency, reducing

turnaround times for vessels and minimizing operational costs. The use of AI in predictive analytics can also optimize resource allocation, further enhancing the port's operational capabilities. By embracing these technological innovations, Port Sudan can reduce delays, improve service reliability, and increase its overall competitiveness in the global maritime industry.

5.5 Environmental Sustainability

In the future, environmental sustainability will become a key focus for ports globally, including Port Sudan, as stricter regulations on emissions and waste management come into effect. To remain competitive, Port Sudan will need to invest in cleaner technologies, such as electrified cranes and shore power for vessels, which can help reduce its carbon footprint. Aligning with international standards, like the IMO's emissions targets, will not only ensure compliance but also enhance the port's appeal to sustainability-conscious shippers (Notteboom and Winkelmans, 2020).

5.6 Regional Trade Integration

The future success of Port Sudan's transit trade is also closely linked to regional trade integration efforts. Initiatives like the African Continental Free Trade Area (AFCFTA) present significant opportunities for increasing the volume of goods passing through Port Sudan. By positioning itself as a key node in Africa's growing trade network, the port can play a pivotal

role in facilitating intra-African trade and connecting landlocked countries to global markets. According to Vickers (2019), enhanced regional integration can lead to more efficient supply chains and increased trade flows, benefiting ports that are strategically located within these networks. Therefore, active participation in regional trade initiatives and lobbying for policies that support greater integration will be essential for Port Sudan to maximize its economic potential and relevance.

5.7 Infrastructure Development

Future infrastructure development is crucial for enhancing Port Sudan's role in transit trade. Ongoing investments in expanding and modernizing port facilities, including increasing container terminal capacity and acquiring advanced cargo handling equipment, are necessary to handle the expected growth in trade volumes. Brooks et al. (2020) emphasize that such infrastructure upgrades can significantly improve a port's ability to accommodate larger vessels and manage more complex logistics operations, boosting its competitiveness in global trade. Additionally, developing hinterland connections, such as road and rail links, is essential for ensuring smooth transit of goods to and from the port, making Port Sudan more appealing to shippers. These improvements will not only enhance operational efficiency but also establish Port Sudan as a key player in both regional and global supply chains.

5.8 Discussion of Future Directions:

The future trajectory of transit trade at Port Sudan will be profoundly influenced by several key factors, including technological advancements, environmental sustainability, regional trade integration, and infrastructure development. Each of these elements plays a critical role in shaping the port's ability to remain competitive in an increasingly globalized and environmentally conscious market.

6. STRENGTHS OF PORT SUDAN

Port Sudan, despite the challenges, possesses several strengths that make it a crucial node in the regional transit trade network. These strengths position it as a key player in facilitating trade for landlocked countries in the region. Port Sudan has different strength points such as:

- **Strategic Location:**

Proximity to Major Trade Routes: Port Sudan's location along the Red Sea places it close to one of the world's busiest maritime trade routes, linking Europe, Asia, and Africa. This strategic position allows it to serve as a critical transshipment point for goods destined for or originating from landlocked countries such as South Sudan, Chad, and Ethiopia. Gateway to Africa: For many countries in East and Central Africa, Port Sudan is one of the most accessible gateways to global markets. Its proximity to the Suez Canal also enhances its importance as a transit hub.

- **Diverse Capabilities:**

Specialized Terminals: The port boasts several specialized terminals, including those for containers, bulk cargo, and oil, which allows it to handle a wide variety of goods. The presence of these facilities makes Port Sudan versatile in managing different types of transit trade. Capacity for Expansion: There is significant potential for expanding the port's capacity. With planned investments in infrastructure and modernization, Port Sudan could significantly increase its cargo handling capabilities, making it more competitive in the region.

- **Existing Infrastructure**

Container Terminal: Port Sudan's container terminal is equipped with multiple berths and handling equipment that, despite being somewhat outdated, provides a solid foundation for future upgrades. The terminal's ability to handle a variety of containerized goods is a significant asset for the port's transit trade operations.

Storage Facilities: The port includes extensive storage facilities, including warehouses and open storage areas, which are crucial for managing the flow of transit goods. These facilities help reduce congestion by allowing for the temporary holding of goods before they are re-exported.

- **Economic Importance to the Region**

Revenue Generation: Transit trade through Port Sudan is a vital source of revenue for Sudan. The fees generated from this trade help support the local economy and fund further improvements in the port's infrastructure.

Job Creation: The port provides employment for a significant portion of the local population, both directly and indirectly. As a major employer, it plays a crucial role in the economic stability of the region.

- **Potential for Technological Upgrades**

Automation Prospects: There is considerable potential for the port to adopt modern technologies such as automated cargo handling and digital documentation systems. These upgrades could significantly improve efficiency and reduce the turnaround times for transit goods.

Sustainability Initiatives: With growing global emphasis on sustainability, Port Sudan can implement environmentally friendly practices, such as reducing emissions and improving energy efficiency, which could enhance its competitiveness.

- **Government Support**

Investment in Infrastructure: The Sudanese government, along with international partners, has shown a commitment to improving the infrastructure of Port Sudan. This includes plans to

modernize the port's facilities and expand its capacity to better serve the needs of transit trade. In addition; Policy Reforms: Efforts are underway to streamline customs procedures and reduce bureaucratic hurdles, which could make the port more attractive to international shippers and traders.

7. OBSTACLES FACING PORT SUDAN IN TRANSIT TRADE

Port Sudan, located on the Red Sea coast of Sudan, is strategically positioned to serve as a vital hub for transit trade, especially for landlocked countries in Africa. However, the port faces several challenges that hinder its full potential in facilitating transit trade.

- **Infrastructure Limitations**

Outdated Facilities: Port Sudan's infrastructure, including its berths and cargo handling equipment, is relatively outdated compared to other major ports. This limits its ability to efficiently handle large volumes of transit goods, especially with the increasing size of container ships.

Insufficient Capacity: The port struggles with inadequate capacity, both in terms of storage space and the ability to accommodate modern, larger vessels. This limitation often leads to congestion and delays, which in turn increases the cost of transit trade for businesses.

- **Operational Inefficiencies**

High Turnaround Times: The time it takes for ships to be serviced and for goods to be processed at Port Sudan is significantly higher compared to other regional ports. This is due to a combination of outdated equipment, insufficient manpower, and bureaucratic delays.

Lack of Automation: The port lacks modern automated systems for cargo handling and documentation processing. This lack of automation results in slower operations and higher risks of errors, further slowing down the transit process.

- **Geopolitical and Economic Instability**

Political Unrest: Sudan has experienced prolonged periods of political instability, which has affected the security and efficiency of its ports. The uncertainty often discourages international shipping companies from routing their vessels through Port Sudan, opting instead for more stable alternatives.

Economic Challenges: Sudan's economy has been under strain due to international sanctions, fluctuating currency values, and inflation. These factors contribute to higher operating costs at the port, which are passed on to businesses using the port for transit trade.

- **Competition from Neighboring Ports**

Regional Competition: Ports in neighboring countries, such as Djibouti and Mombasa, offer more modern facilities and efficient

services, making them more attractive options for transit trade. The competition from these ports diverts potential business away from Port Sudan.

Preferential Trade Agreements: Some neighboring ports benefit from preferential trade agreements with landlocked countries, giving them a competitive edge over Port Sudan.

- **Bureaucratic Hurdles**

Complex Customs Procedures: The customs clearance process at Port Sudan is often slow and cumbersome, with multiple layers of bureaucracy that delay the transit of goods. This complexity can lead to increased costs and discourage traders from using the port.

Corruption and Lack of Transparency: Corruption within the port's administration and customs authorities is a significant challenge. This lack of transparency adds to the operational costs and time delays, further diminishing the port's attractiveness for transit trade.

8. CONCLUSION

The Sudan Container Port plays a pivotal role in the transit trade market within the region. Its strategic positioning, coupled with its modern infrastructure and significant economic impact, highlights its crucial importance. To fully realize the port’s potential, it is essential to address current challenges and capitalize on emerging opportunities, ensuring that it continues to

contribute significantly to regional trade and economic growth. The port's function in facilitating transit trade is critical for the economic well-being of Sudan and its landlocked neighboring countries, positioning it as a key economic player in the region.

Additionally, the transit market at Sudan's Port Sudan container terminal offers substantial opportunities due to its strategic location on the Red Sea. However, to fully leverage this potential, it is necessary to overcome existing infrastructural obstacles and adapt to future trends, such as the increasing prevalence of mega-ships, the rise of automation, and the push for sustainability. While there is an expanding body of research on these topics, more focused studies on Port Sudan are required to generate actionable insights that can inform policy and investment strategies, thereby enhancing the port's influence in both regional and global transit markets.

9. RECOMMENDATIONS

- Invest in upgrading and expanding the port's infrastructure, particularly to accommodate mega-ships and larger cargo volumes.
- Actively participate in regional trade agreements and Strengthen relationships with neighboring landlocked countries by offering competitive transit services.
- Strengthening the connection between roads and the port's rear areas by developing the road and railway network linking

Sudan to neighboring countries making it a more attractive option for shippers and boosting its competitiveness.

- Invest in the training and development of the port's workforce to ensure that they are equipped to handle advanced technologies and adopt best practices in port management.
- Seek partnerships with international investors and port operators to secure funding for infrastructure projects and technology upgrades.

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